

## CLAIMS

What is claimed is:

1. An electrical cable assembly configured to mate with a receptacle, the electrical cable assembly comprising:

    a cable having a plurality of conductors;

    a fitting to which the cable is attached; and

    a terminal attached to the fitting such that when the electrical cable assembly is mated with the receptacle, a joint cooperatively defined by the terminal and the fitting is substantially disposed within the receptacle, the terminal comprising:

        a terminal element substantially comprising a resilient non-electrically conductive material and having first and second ends, the first end being attached to the fitting; and

        a plurality of electrical contacts at least indirectly attached to the terminal element proximate the second end, each of the plurality of electrical contacts being in electrical communication with a corresponding conductor of the cable.

2. The electrical cable assembly as recited in claim 1, wherein the terminal element is substantially in the shape of a cone.

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3. The electrical cable assembly as recited in claim 1, wherein the resilient non-electrically conductive material of the terminal element substantially comprises a material selected from the group consisting of: rubber; nylon; silicon; and, polytetrafluoroethylene.

4. The electrical cable assembly as recited in claim 1, further comprising a connector configured and arranged to enable removable attachment of the electrical cable assembly to the receptacle.

5. The electrical cable assembly as recited in claim 1, further comprising an additional terminal attached to the cable.

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6. An electrical cable assembly, comprising:
  - a cable having a plurality of electrical conductors;
  - a fitting to which the cable is attached; and
  - a terminal attached to the fitting and comprising:
    - a terminal element substantially comprising a resilient, non-electrically conductive material and having first and second ends, the first end being joined to the fitting so that a joint is cooperatively defined by the terminal and the cable, and the terminal element defining a substantially annular groove located proximate the joint; and
    - a plurality of electrical contacts at least indirectly attached to the terminal element proximate the second end, each of the plurality of electrical contacts being in electrical communication with a corresponding electrical conductor of the cable.

7. The electrical cable assembly as recited in claim 6, wherein a cross-sectional shape of the substantially annular groove comprises a portion of one of: an ellipse; and, a circle.

8. The electrical cable assembly as recited in claim 6, wherein the terminal element defines at least one additional substantially annular groove.

9. The electrical cable assembly as recited in claim 6, wherein the terminal element is substantially in the shape of a cone.

10. The electrical cable assembly as recited in claim 6, wherein the resilient non-electrically conductive material of the terminal element substantially comprises a material selected from the group consisting of: rubber; nylon; silicon; and, polytetrafluoroethylene.

11. The electrical cable assembly as recited in claim 6, further comprising a connector configured and arranged to enable removable attachment of the electrical cable assembly to the receptacle.

12. The electrical cable assembly as recited in claim 6, further comprising an additional terminal attached to the cable.

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13. An electrical cable assembly configured to mate with a receptacle, the electrical cable assembly comprising:

a cable having a plurality of electrical conductors;

a metal fitting to which the cable is attached; and

a terminal attached to the cable, the terminal comprising:

a terminal element substantially comprising a resilient non-electrically conductive material and having first and second ends, the first end being joined to the metal fitting;

a plurality of electrical contacts at least indirectly attached to the terminal element proximate the second end, each of the plurality of electrical contacts being in electrical communication with a corresponding electrical conductor of the cable; and

means for facilitating control of the diametric expansion of the terminal element.

14. The electrical cable assembly as recited in claim 13, wherein the means for facilitating control of the diametric expansion of the terminal element substantially prevents the terminal element from expanding beyond the confines of the receptacle when the electrical cable assembly is mated with the receptacle.

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15. The electrical cable assembly as recited in claim 13, wherein the means for facilitating control of the diametric expansion of the terminal element substantially precludes arcing between the electrical cable assembly and the receptacle.

16. The electrical cable assembly as recited in claim 13, wherein the means for facilitating control of the diametric expansion of the terminal element contributes to retention of the terminal element in an operational position relative to the receptacle while the electrical cable assembly is mated with the receptacle.

17. The electrical cable assembly as recited in claim 13, wherein the means for facilitating control of the diametric expansion of the terminal element is implemented as at least one substantially annular groove defined by the terminal element proximate the first end of the terminal element.

18. The electrical cable assembly as recited in claim 13, wherein the means for facilitating control of the diametric expansion of the terminal element comprises a joint formed at the connection of the terminal element and cable and configured and arranged to reside substantially within the receptacle when the electrical cable assembly is mated with the receptacle.

19. The electrical cable assembly as recited in claim 13, wherein the terminal element is substantially in the shape of a cone.

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20. The electrical cable assembly as recited in claim 13, wherein the resilient non-electrically conductive material of the terminal element substantially comprises a material selected from the group consisting of: rubber; nylon; silicon; and, polytetrafluoroethylene.

21. The electrical cable assembly as recited in claim 13, further comprising a connector configured and arranged to enable removable attachment of the electrical cable assembly to the receptacle.

22. The electrical cable assembly as recited in claim 13; further comprising an additional terminal attached to the cable.

23. The electrical cable assembly as recited in claim 13, wherein the metal fitting comprises an elbow configuration.

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24. A high voltage electrical cable assembly configured to mate with a receptacle, the high voltage electrical cable assembly comprising:

a cable having a plurality of electrical conductors;

a fitting to which the cable is attached; and

a terminal attached to the fitting, the terminal comprising;

a terminal element substantially comprising a resilient

non-electrically conductive material and being substantially

conical in shape, the terminal element having first and second

ends, the first end being attached to the fitting;

a plurality of conductive elements substantially disposed

within the terminal element, each of the conductive elements

being in electrical communication with a corresponding electrical

conductor of the cable; and

a plurality of electrical contacts at least indirectly attached

to the terminal element proximate the second end, each of the

plurality of electrical contacts being in electrical communication

with a corresponding conductive element of the terminal element;

means for facilitating control of the diametric expansion of the terminal

element; and

a connector configured to enable removable attachment of the high voltage electrical cable assembly to the receptacle.

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25. The high voltage electrical cable assembly as recited in claim 24, wherein the means for facilitating control of the diametric expansion of the terminal element substantially prevents the terminal element from expanding beyond the confines of the receptacle when the electrical cable assembly is mated with the receptacle.

26. The high voltage electrical cable assembly as recited in claim 24, wherein the means for facilitating control of the diametric expansion of the terminal element substantially precludes arcing between the electrical cable assembly and the receptacle.

27. The high voltage electrical cable assembly as recited in claim 24, wherein the means for facilitating control of the diametric expansion of the terminal element contributes to retention of the terminal element in an operational position relative to the receptacle while the electrical cable assembly is mated with the receptacle.

28. The high voltage electrical cable assembly as recited in claim 24, wherein the means for facilitating control of the diametric expansion of the terminal element is implemented as at least one substantially annular groove defined by the terminal element proximate the first end of the terminal element.

29. The high voltage electrical cable assembly as recited in claim 24, wherein the means for facilitating control of the diametric expansion of the terminal element comprises a joint formed at the connection of the terminal element and fitting and being configured and arranged to reside substantially within the receptacle when the electrical cable assembly is mated with the receptacle.

30. The high voltage electrical cable assembly as recited in claim 24, further comprising a connector configured and arranged to enable removable attachment of the electrical cable assembly to the receptacle.

31. The high voltage electrical cable assembly as recited in claim 24, further comprising an additional terminal attached to the cable.

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32. A terminal suitable for use in connection with a high voltage cable and associated fitting, the terminal comprising:

a terminal element substantially comprising a resilient non-electrically conductive material and having first and second ends, the first end being configured to be attached to the fitting, and a substantially annular groove defined by the terminal element being located proximate the first end;

a plurality of conductive elements substantially disposed within the terminal element, each of the conductive elements being configured and arranged for electrical communication with the high voltage cable; and

a plurality of electrical contacts at least indirectly attached to the terminal element proximate the second end, each of the plurality of electrical contacts being connected to a corresponding conductive element.

33. The terminal as recited in claim 32, wherein the terminal element is substantially in the shape of a cone.

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34. The terminal as recited in claim 32, wherein the resilient non-electrically conductive material of the terminal element substantially comprises a material selected from the group consisting of: rubber; nylon; silicon; and, polytetrafluoroethylene.

35. The terminal as recited in claim 32, wherein a cross-sectional shape of the substantially annular groove comprises a portion of one of: an ellipse; and, a circle.

36. The terminal as recited in claim 32, wherein a cross-sectional shape of the substantially annular groove is substantially in the form of one of: a rectangle; a square

37. The terminal as recited in claim 32, wherein the terminal element defines at least one additional substantially annular groove.

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